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GENERAL HEADQUARTERS
UNITED STATES ARMY FORCES, PACIFIC
OFFICE OF THE CHIEF SURGEON

CIRCULAR LETTER)

NO 48)

A.P.O. 500

10 November 1945

CONTROL OF EPIDEMIC INFLUENZA

1. General. The transfer of considerable numbers of Army personnel from tropical and sub-tropical regions to localities in Japan which have cold and wet climates in the winter months makes it likely that the incidence of respiratory disease will increase sharply in contrast to case rates which have been experienced in warmer climates. The prevalence of virus influenza type B, in outbreaks of respiratory disease in widely scattered areas during the months of May and June 1945, together with other epidemiological considerations, suggest the possibility that an epidemic of influenza may occur during the coming winter.

2. Etiology. Epidemic influenza is caused by a virus of which there are several types, two of which are serologically differentiated as A and B. Present evidence indicates that type B influenza virus is most often the cause of epidemics. Immunity to virus A does not protect an individual from infection with virus B. The virus of influenza is present in the respiratory discharges of the infected individual and is transferred directly to the respiratory tract of susceptibles. Indirect transfer by contaminated articles may occur but is far less likely than by direct transfer. The element of crowding offers an ideal means for extensive inoculation of susceptibles.

3. Recognition of Disease.

a. Influenza is a respiratory disease which occurs sporadically and in epidemics, varying in severity and extent, and spreading rapidly throughout the population. The diagnosis should not be reserved for highly fatal pandemics nor used indiscriminately for all upper respiratory infections. The onset of illness is abrupt with fever, bodily aches, chilliness or chills, nasopharyngeal irritation and mild cough. Prostration is out of proportion to the physical findings. Severe sore throat or coryza comparable to that of the common cold are unusual. The leukocyte count is normal or decreased. Fever in uncomplicated cases lasts, on the average, from 3 to 5 days, and recovery, except for convalescent weakness, is prompt. Pneumonic involvement varies in incidence in different outbreaks, is commonly associated with secondary bacterial infection, and is suggested by persistence or sudden return of fever. Rapidly fatal cases are not the rule. Subclinical infection is frequent. The disease can be transmitted from sputum or nasopharyngeal washings of patients to ferrets, mice, and certain other experimental animals as well as to the chick embryo.

4. Diagnosis. A tentative diagnosis may be made on clinical and epi-

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demiological evidence. Confirmation depends on laboratory demonstration of the virus by serological tests. Two samples of blood should be collected from each patient, the first during the initial 3 or 4 days of illness and the second about 2 weeks later. Each sample should be 20 to 25 cc of blood and is best collected in the standard Tube vacuum 30 cc, Medical Supply Catalogue Item No. 1825700. The blood is allowed to clot in a slant by placing the filled vacuum tube on its side in a slanting position and should not be disturbed until a clot forms.

5. Control Measures in Advance of an Epidemic.

a. Immunization: All Army personnel are required to be vaccinated with influenza vaccine, during the months of October or November, 1945. After 1 October the accomplishment of this vaccination will be a requirement for travel from one theater to another or to the United States. Influenza vaccine, types A and B, is supplied in 30 cc vials, Medical Supply Catalogue Stock No. 1605900. The dosage is a single injection of 1.0 cc. As the vaccine is made by growth of virus in egg allantoic fluid, precautions will be taken not to administer it to persons who are hypersensitive to eggs.

b. Medical Intelligence: Unit surgeons will maintain liaison with military government and civilian public health authorities to assure early information of the presence of influenza.

c. Designation of Virology Laboratory: Virology laboratories are designated as follows: the 19th General Medical Laboratory for the Western Pacific Area; the 18th General Medical Laboratory for the Middle Pacific Area, Japan and Korea.

d. Supplies: Adequate stocks should be procured of sulfadiazine for prophylaxis, and of penicillin or sulfadiazine for treatment as in paragraph 8 d below.

6. Control Measures - Sporadic or Mild Influenza.

a. Recognition of disease. Medical officers should make every effort to secure early and accurate diagnosis of epidemic influenza. When facilities are available, the diagnosis should be confirmed by virus isolation and serological tests. Outbreaks of epidemic influenza should be reported directly by the most expeditious means to this headquarters.

b. Isolation. The patient should be isolated during the acute phase of the disease and in early convalescence. It is important to protect patients and early convalescents from secondary bacterial infection through contact with infected individuals, particularly in the presence of a high incidence of bacterial complications.

c. Elimination of Overcrowding. In the presence of an epidemic, unnecessary congregation in mess halls, recreation centers, or barracks should be eliminated and the maximum possible floor and cubic space per man provided. Tentage should be utilized to provide additional floor space if necessary. Ventilation of barracks, squad rooms, mess halls, and places of assembly should be supervised closely by unit commanders. New

or unseasoned troops should be segregated, and transfer of troops to and from infected camps should not be permitted except for military necessity. The transfer by train or transport of bodies of troops infected with influenza is particularly hazardous. Their close association under such conditions will result in the infection of many who would otherwise escape and in a high incidence of complications and deaths which otherwise might be avoided.

d. Oiling of Floors to Reduce Air-borne Infection. Floors should be oiled with one gallon of light floor oil per 150 square feet. Air-borne infection is further reduced by use of floor oil mixed with sawdust in the proportion of $2\frac{1}{2}$ gallons oil to 100 pounds of sawdust for sweeping floors.

e. Mess Sanitation. The greatest care should be taken to insure the proper sterilization of dishes and other utensils which may have been contaminated by respiratory discharges.

f. Personal Hygiene. Indirect infection by soiled hands and handkerchiefs, or by towels used in common, should be avoided. Special instruction should be given in personal cleanliness, especially in respect to spitting and the covering of coughs and sneezes. Frequent washing of hands should be stressed. Wash basins contaminated by washings from the mouth and nose are considered to be particularly dangerous. Whenever possible, the hands and face should be washed in water flowing directly from the tap and not in water collected in a contaminated basin.

g. Concurrent Disinfection. Discharges from nose and throat of patient.

7. Additional Control Measures with Epidemic Influenza.

a. Physical Inspection. Unit medical officers should maintain close surveillance of the troops by frequent inspections during epidemic periods. Suspects and incipient cases should be promptly isolated in hospitals. Patients with any signs of respiratory disease should not be sent to duty. These measures tend to delay the spread of the disease and also reduce the risk of secondary bacterial infection.

b. Public Gatherings. Orders may be issued by responsible commanders designed to hold to a minimum the size and number of public gatherings and to prevent all unnecessary contact with the civilian population.

c. Quarantine. Should be restricted to situations in which there is clear-cut localization of the infection to certain units or areas.

d. Sulfadiazine Prophylaxis.

(1) Sulfadiazine prophylaxis is of no value in preventing infection with the virus of influenza. Its value is in preventing infection with secondary invaders once the virus disease has been established.

(2) Commanding generals of major echelons on advice of their surgeons may authorize the use of sulfadiazine prophylaxis when the admission rate per thousand per annum for common respiratory diseases including influenza in a battalion or larger unit exceeds 400 for a period of a week or more provided that more than 20 percent of the cases show complicating infections attributable to the hemolytic streptococcus bacteriologically or clinically. This headquarters should be notified upon the institution of sulfadiazine prophylaxis, and a statement made as to the reasons that it is indicated.

(3) Dosage. One gram of sulfadiazine is administered daily in a single dose. An adequate fluid intake should be assured. Sulfadiazine prophylaxis should not be continued for longer than 3 weeks.

(4) Judgement must be exercised in using admission rates as a basis for chemoprophylaxis. It is necessary to study not only the organization as a whole, but also its component parts, for a high incidence of streptococcal disease in a large organization may be due almost entirely to disease in a single regiment or battalion. Sulfadiazine prophylaxis in a large organization should be confined to the component units with high incidence of hemolytic streptococcus infection as defined in paragraph 7 d (1) above.

8. Treatment. There is no specific therapy for uncomplicated influenza. Complete rest, good nursing care, and careful observation for the early detection of complications are the important factors. Fluid intake should be carefully watched. Symptomatic therapy should be utilized judiciously. Frequent blood and throat cultures, white blood counts and chest X-rays are indicated when progress is unsatisfactory.

a. The common complications are pneumonia, bronchitis, otitis media, tonsillitis and sinusitis, in that order. The bacteria which are the usual cause of these complications are the streptococcus, the pneumococcus, the staphylococcus, the Haemophilus influenza and Friedlander's bacillus. Staphylococcus pneumonia which, although rare, is most frequently associated with epidemics of influenza, has an abrupt onset associated with a characteristic cherry-red, indigo-blue cyanosis and evidence of overwhelming toxicity. All complications, but particularly staphylococcus pneumonia, require immediate recognition and prompt treatment if mortality is not to be excessive.

b. Penicillin is the drug of choice in complications due to the streptococcus, pneumococcus or staphylococcus. Sulfadiazine should be given therapeutic trial when a complicating pneumonic infection is due to the Haemophilus influenza.

c. Attention is directed to the desirability of adequate bed rest and avoidance of exertion and exposure during convalescence in order to reduce the incidence and severity of complicating infections.

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d. It is recommended that patients hospitalized with influenza during an epidemic of this disease be given sulfadiazine, (1 gram four (4) times a day) or penicillin intramuscularly during the acute stage of their illness, in anticipation of secondary bacterial infection.

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